

OPINIONS AND DECLARATIONS RENDERED BY THE INTER- NATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the Commission

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OPINION 419

Validation under the Plenary Powers of the names published by William Martin in 1809 in the work entitled *Petrificata Derbiensia* for eight species of the Class Brachiopoda and for two species of the Class Anthozoa and matters incidental thereto

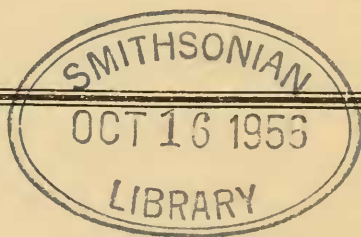
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INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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(16th December 1954)

OPINION 419

VALIDATION UNDER THE PLENARY POWERS OF THE NAMES PUBLISHED BY WILLIAM MARTIN IN 1809 IN THE WORK ENTITLED "PETRIFICATA DERBIENSIA" FOR EIGHT SPECIES OF THE CLASS BRACHIOPODA AND FOR TWO SPECIES OF THE CLASS ANTHOZOA AND MATTERS INCIDENTAL THERETO

RULING:—(1) Under the Plenary Powers the under-mentioned specific names published by Martin (W.) in 1809 in the work entitled *Petrificata Derbiensia* are hereby validated as from the above date and work :—

- (a) *resupinatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (resupinatus)* (Class Brachiopoda)¹ ;
- (b) *semireticulatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (semireticulatus)* (Class Brachiopoda) ;
- (c) *crumena* Martin, 1809, as published in the combination *Conchyliolithus Anomites (crumena)* (Class Brachiopoda) ;
- (d) *trigonalis* Martin, 1809, as published in the combination *Conchyliolithus Anomites (trigonalis)* (Class Brachiopoda) ;

¹ Dr. Helen Muir-Wood (the applicant for this portion of the present case) has notified the Office of the International Commission that, in her opinion, the term Brachiopoda should be reserved for use as the name for a Phylum. On this view, the Phylum Brachiopoda consists of two Classes, of which one is the Class Articulata, to which all the species of Brachiopoda discussed in the present *Opinion* should, Dr. Muir-Wood states, be referred.

- (e) *subconicus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (subconicus)* (Class Brachiopoda) ;
- (f) *striatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (striatus)* (Class Brachiopoda) ;
- (g) *productus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (productus)* (Class Brachiopoda) ;
- (h) *pugnus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (pugnus)* (Class Brachiopoda) ;
- (i) *duplicatus* Martin, 1809, as published in the combination *Erismatolithus Madreporites (duplicatus)* (Class Anthozoa) ;
- (j) *floriformis* Martin, 1809, as published in the combination *Erismatolithus Madreporites (floriformis)* (Class Anthozoa).

(2) The under-mentioned specific names of species of the Class Brachiopoda, as validated under the Plenary Powers Ruling in (1)(a) to (1)(h) above respectively, are hereby placed on the *Official List of Specific Names in Zoology* with the Name Numbers severally specified below, the entries so made to be endorsed in each case in the manner shown hereunder :—

- (a) *resupinatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites resupinatus*, the species so named to be interpreted by the neotype therefor designated by George (T.N.) & Ponsford (D.A.) in 1938, particulars of which are given in Section (1) (paragraphs 5—7) of Appendix 1 to the present *Opinion* (Name No. 734) ;

- (b) *semireticulatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites semireticulatus*, the species so named to be interpreted by the neotype therefor designated by Muir-Wood (H.M.) in Section (2) (paragraphs 8 and 9) of Appendix 1 to the present *Opinion* (Name No. 735) ;
- (c) *crumena* Martin, 1809, as published in the combination *Conchyliolithus Anomites crumena*, the species so named to be interpreted by the neotype therefor designated by Muir-Wood (H.M.) in Section (3) (paragraphs 10—12) of Appendix 1 to the present *Opinion* (Name No. 736) ;
- (d) *trigonalis* Martin, 1809, as published in the combination *Conchyliolithus Anomites trigonalis*, the species so named to be interpreted by the neotype therefor designated by Muir-Wood (H.M.) in Section (4) (paragraphs 13—15) of Appendix 1 to the present *Opinion* (Name No. 737) ;
- (e) *subconicus* Martin, 1809, as published in the combination *Conchyliolithus Anomites subconicus*, the species so named to be interpreted by the neotype therefor designated by North (F.J.) in 1921, particulars of which are given in Section (5) (paragraphs 16—18) of Appendix 1 to the present *Opinion* (Name No. 738) ;
- (f) *striatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites striatus*, the species so named to be interpreted by the neotype therefor designated by Muir-Wood (H.M.) in Section (6) (paragraphs 19—21) of Appendix 1 to the present *Opinion* (Name No. 739) ;
- (g) *productus* Martin, 1809, as published in the combination *Conchyliolithus Anomites productus*, the species so named to be interpreted by reference to Martin's holotype, now preserved in the British Museum (Natural History), particulars of

which are given in Section (7) (paragraphs 22—24) of Appendix 1 to the present *Opinion* (Name No. 740) ;

- (h) *pugnus* Martin, 1809, as published in the combination *Conchylolithus Anomites pugnus*, the species so named to be interpreted by reference to Martin's holotype, now preserved in the British Museum (Natural History), particulars of which are given in Section (8) (paragraph 25) of Appendix 1 to the present *Opinion* (Name No. 741).

(3) The under-mentioned specific names of species of the Class Anthozoa, as validated under the Plenary Powers under (1)(a) and (1)(b) above respectively, are hereby placed on the *Official List of Specific Names in Zoology* with the Name Numbers specified below and respectively, the entries so made to be endorsed in the manner shown in each case below :—

- (a) *duplicatus* Martin, 1809, as published in the combination *Erismatolithus Madreporites duplicatus*, the species so named to be interpreted by reference to the neotype therefor designated by Stanley Smith in 1916, particulars of which are given in Section (a) of Appendix 2 of the present *Opinion* (Name No. 742) ;

- (b) *floriformis* Martin, 1809, as published in the combination *Erismatolithus Madreporites floriformis*, the species so named to be interpreted by reference to the neotype therefor designated by Stanley Smith in 1916, particulars of which are given in Section (b) of Appendix 2 of the present *Opinion* (Name No. 743).

(4) The under-mentioned generic names are hereby placed on the *Official List of Generic Names in Zoology* with the Name Numbers severally specified below :—

- (a) *Lonsdaleia* M^cCoy, 1849 (gender : feminine) (type species, by original designation : *Erismatolithus Madreporites duplicatus* Martin, 1809, as validated

under the Plenary Powers under (1)(i) above and as defined in (3)(a) above) (Class Anthozoa) (Name No. 999) ;

(b) *Schizophoria* King, 1850 (gender : feminine) (type species, by original designation : *Conchylolithus Anomites resupinatus* Martin, 1809, as validated under the Plenary Powers under (1)(a) above and as defined under (2)(a) above) (Class Brachiopoda) (Name No. 1000) ;

(c) *Productus* Sowerby (J.), 1814 (gender : masculine) (type species, by absolute tautonymy : *Conchylolithus Anomites productus*, as validated under the Plenary Powers under (1)(g) above and as defined under (2)(g) above) (Class Brachiopoda) (Name No. 1001) ;

(d) *Dictyoclostus* Muir-Wood, 1930 (gender : masculine) (type species, by original designation : *Conchylolithus Anomites semireticulatus*, as validated under the Plenary Powers under (1)(b) above and as defined under (2)(b) above) (Class Brachiopoda) (Name No. 1002).

(5) It is hereby directed that, when, in accordance with (2) and (3) above, the under-mentioned specific names are entered on the *Official List of Specific Names in Zoology*, an endorsement be made that the names in question are the specific names of the type species of the genera severally specified below :—

(a) *resupinatus* Martin, 1809, as published in the combination *Conchylolithus Anomites resupinatus* : specific name of type species of *Schizophoria* King, 1850 ;

(b) *semireticulatus* Martin, 1809, as published in the combination *Conchylolithus Anomites semireticulatus* : specific name of type species of *Dictyoclostus* Muir-Wood, 1930 ;

(c) *productus* Martin, 1809, as published in the combination *Conchylolithus Anomites productus* :

specific name of type species of *Productus* Sowerby (J.), 1814 ;

- (d) *duplicatus* Martin, 1809, as published in the combination *Erismatolithus Madreporites duplicatus* : specific name of type species of *Lonsdaleia* M^cCoy, 1849).

(6) It is hereby directed that the entry of the generic name *Spirifer* Sowerby (J.), 1816, as Name No. 472 on the *Official List of Generic Names in Zoology* made by the Ruling given in *Opinion* 100, as supplemented by the General Directive relating to the placing on that *List* of any name which has been made the subject of a direction under the Plenary Powers issued to the International Commission on Zoological Nomenclature by the Thirteenth International Congress of Zoology, Paris, 1948, be amended to read as follows :—

472. *Spirifer* Sowerby (J.), 1816 (type species, by designation under the Plenary Powers [*Opinion* 100] : *Conchylolithus Anomites striatus* Martin, 1809, as validated under the Plenary Powers [under (1)(f) above]).

(7) The under-mentioned specific names are hereby placed on the *Official Index of Rejected and Invalid Specific Names in Zoology* with the Name Numbers severally specified below :—

- (a) *conaxis* M^cCoy, 1849, as published in the combination *Strombodes conaxis* (a junior objective synonym of *floriformis* Martin, 1809, as published in the combination *Erismatolithus Madreporites floriformis*, as validated under the Plenary Powers under (1)(j) above and as defined under (3)(b) above) (Class Anthozoa) (Name No. 315) ;
- (b) *semistriatus* Sowerby (J.), 1821, as published in the combination *Annomites* [sic] *semistriatus* (an Erroneous Subsequent Spelling of *semireticulatus* Martin, 1809, as published in the combination *Conchylolithus Anomites semireticulatus*) (Class Brachiopoda) (Name No. 316).

I.—THE STATEMENT OF THE CASE

The present case arises out of the decision taken by the International Commission on Zoological Nomenclature at its Session held in Paris in 1948 that in the work published in 1809 under the title *Petrificata Derbiensia* William Martin did not apply the principles of binominal nomenclature and therefore that new names in the foregoing work did not acquire the status of availability by reason of having been published therein. This decision was published in 1950 in the Official Record of the Proceedings of the Commission at its Paris Session (1950, *Bull. zool. Nomencl.* 4 : 450—452) and has since been formally promulgated in *Opinion 231* (1954, *Ops. Decls. int. Comm. zool. Nomencl.* 4 : 239—248). In taking the foregoing decision, the International Commission recognised that there might be names in Martin's *Petrificata* of 1809 which had come into general use and which it was desirable should be preserved in the interests of nomenclatorial stability ; the Commission accordingly placed on record its willingness to give sympathetic consideration to any applications which might be submitted to it on this account. The open invitation so issued led to correspondence in the spring of 1950 between the Secretary to the Commission on the one hand and Dr. C. J. Stubblefield (*Geological Survey and Museum, London*) and Dr. Helen Muir-Wood (*British Museum (Natural History), London*) on the other hand. This correspondence culminated in the submission by the foregoing specialists of the following application on 18th September 1950 :—

Proposed use of the Plenary Powers to validate the trivial names of two nominal species of the Class Anthozoa and of eight nominal species of the Class Brachiopoda, published by William Martin in 1809 in the work entitled "Petrificata Derbiensia" and matters incidental thereto

By HELEN M. MUIR-WOOD, D.Sc.

(*Department of Geology, British Museum (Natural History), London*)

and

C. J. STUBBLEFIELD, D.Sc., F.R.S.

(*Geological Survey and Museum, London*)

At its Session held in Paris in July 1948 the International Commission on Zoological Nomenclature ruled that the works by W. Martin

published respectively in 1793,* under the title *Figures and Descriptions of Petrifications collected in Derbyshire* and in 1809 under the title *Petrificata Derbiensia* did not comply with the binominal requirements of the *Règles* and therefore that no new "names" published therein possessed any availability under the *Règles* in virtue of being published therein. It is assumed that in arriving at this decision consideration was taken of the publication by W. Martin of "Outlines of an Attempt to establish a Knowledge of Extraneous Fossils and Scientific Principles", [Macclesfield] 1809, pt. 1, vi, chapter headed "Principles of Nomenclature", pp. 202—203, where the following statement occurs: "Names of the Species. The name of a species properly consists of the generic (i.e. name of the genus) and trivial name. The trivial name is a word added to the name of the genus, in order to form a distinctive appellation for a species".†

In its ruling, the International Commission placed on record its intention "to give sympathetic consideration to any application which might be submitted by interested specialists for the validation as from Martin, 1809, of any trivial name first published by that author in his *Petrificata Derbiensia* where that name was in general use for a common species and it could be shown that under (1) above it would be necessary to change the name of that species and that such change would lead to confusion in nomenclature". (Commission Minutes, Paris Session, 14th Meeting, Conclusion 15 (2) 1950, *Bull. zool. Nomencl.* 4 (16/18) : 450—452.)

2. It is in accordance with the invitation so extended to specialists that the present application is submitted for consideration. It relates to the trivial names of ten species published in Martin's *Petrificata Derbiensia* of 1809. Several of the nominal species so named by Martin are the type species of important and well-known genera. The fossil genera in question contain species of common occurrence which are

* In the *Official Record* of the decision by the International Commission the date given for this work is 1793, the date which it bears, but according to a statement by Martin himself (1809, *Petrificata Derbiensia*, Preface : v) this work was published in Parts, the first Part not having been issued until 1794. It has not, however, proved possible to find any confirmation of this statement.

† "In writing or speaking of *permanent* species of reliquia, of which the originals are *unknown*, it will generally be found convenient to use the *family* name, with the *generic* and *trivial* ones—as, CONCHYL. *Anomites striatus*—CONCHYL. *Anomites productus*, &c., &c. In this mode, a more determinate idea is given of the *reliquium*, than if the *trivial* name were used with the *generic* one alone. Nor is the insertion of the family name between the generic and trivial appellations, as just given, contrary to the practice of our first naturalists, who, in treating of detached species belonging to *genera* in which Linnaeus found it necessary to establish *families* or *subdivisions*, frequently use the *family* name in conjunction with the *generic* and *trivial* denominations—as, 'PHALAENA Geomètra *rufata*—PAPILIO Eques *Hector*—PHALAENA *Tinea pratella*,'"

of importance in Carboniferous and Permian stratigraphical palaeontology, not only of Europe and Asia but also of America. Failure to validate these species would cause considerable confusion in stratigraphical and palaeontological literature. The request now submitted to the International Commission is that it should (1) validate each of the trivial names concerned under its Plenary Powers, and, having done so, should (2) place the trivial names in question on the *Official List of Specific Trivial Names in Zoology*.

3. In some of the cases now submitted the identity of the nominal species bearing the trivial names which form the subject of the present application has been determined by later authors, acting under Article 31. We recommend that in placing the trivial names in question on the *Official List*, the Commission should include a reference to such determinations in the same way as we understand was done in similar cases when names were placed by the Commission on this *Official List* during its Paris Session.

4. The names which we ask the Commission to validate under its Plenary Powers are specified in the following paragraphs where we give also the grounds on which we base the applications so submitted.

- (1) & (2) The trivial names “*duplicatus*” and “*floriformis*” Martin, 1809, as published respectively in the combinations “*Erismatolithus Madreporites (duplicatus)*” and “*Erismatolithus Madreporites (floriformis)*”

5. The species name *Erismatolithus Madreporites (duplicatus)* Martin (W.), 1809 (*Petrif. derb.* : sign. N[4], pl. 30, figs. 1, 2) is the name of the coral nominal species which is the type species of the genus *Lonsdaleia* McCoy (F.), 1849 (*Ann. Mag. nat. Hist.* (2) 3 : 12). The species was designated as type species of the above genus by McCoy in 1849 (*loc. cit.*).

6. *Erismatolithus Madreporites (floriformis)* Martin, 1809 (*Petrif. derb.* : sign. U[1], pl. 43, figs. 3, 4 and pl. 44, fig. 5) has for more than seventy years been referred to the genus *Lonsdaleia*.

7. *Lonsdaleia* is a commonly occurring genus of Anthozoa in Carboniferous rocks, and the species *Lonsdaleia floriformis* (Martin) has, for over forty years, been used as a zonal index in Lower Carboniferous stratigraphy.

8. The first reviser of Martin's species was J. Fleming who, in 1828 (*The History of British Animals* : 509), assigned *E. M. duplicatus* to the recent genus *Caryophyllia* Lamarck, 1801 (*Syst. Anim. sans Vertèbr.* :

370) and placed *E. M. floriformis* in his new genus *Lithostrotion* (: 508). Fleming gave no new illustration of these species, but W. Lonsdale in 1845, "Description of some Characteristic Palaeozoic Corals of Russia" (in Murchison & others, *The Geology of Russia in Europe and the Ural Mountains* 1 : 603) selected Martin's species *E. M. floriformis* as the type species of Fleming's genus *Lithostrotion*. To stabilize modern concepts of both the genera *Lonsdaleia* McCoy and *Lithostrotion* Fleming, however, the International Commission in *Opinion* 117 published in 1931 (*Smithson. misc. Coll.* 73 (No. 7) : 18—19) suspended the Rules and standardised *Lithostrotion* Fleming, 1828, with *Lithostrotion striatum* Fleming, 1828 (*loc. cit.* : 508) as the type species.

9. The genus *Lonsdaleia* has been made the subject of a special study by Stanley Smith in a paper entitled "The Genus *Lonsdaleia* and *Dibunophyllum rugosum*", published in 1916 (*Quart. J. geol. Soc. Lond.* 71 : 218—272, pls. 17—21). The nomenclatorial history of the two *Lonsdaleia* species in question thus received particular attention, the results of which it would be confusing to workers to disturb. All Martin's syntypes of the two species now being considered are lost, but Stanley Smith chose two neotypes from the Sedgwick Museum collections, which he illustrated in his 1916 paper ; (1) for *Erismatolithus Madreporites duplicatus* as pl. xvii, fig. 1 and (2) for *E. M. floriformis* as pl. xix, figs. 1—3. The latter specimen was the type-specimen of *Strombodes conaxis* McCoy (*Ann. Mag. nat. Hist.* (2) 3 : 10, pl. 49).

10. There appears, therefore, to be a strong case for the validation of the trivial names of Martin's nominal species *Erismatolithus Madreporites duplicatus* and *Erismatolithus Madreporites floriformis* (commonly known as *Lonsdaleia duplicata* and *L. floriformis* respectively), since both the species in question are well known and commonly occurring Lower Carboniferous species, and any disturbance of these names would cause confusion.

(3) The trivial name "resupinatus" Martin, 1809, as published in the combination "Conchyliolithus Anomites (resupinatus)"

11. The species name *Conchyliolithus Anomites (resupinatus)* Martin, 1809 (*Petrif. derb.* : sign. Z[4], pl. 49, figs. 13, 14) is the name of the nominal species of brachiopod which is the type species of the genus *Schizophoria* King, 1850 (*Mon. Permian Foss.* (Palaeont. Soc.) : 105) by original designation.

12. Martin's species was redescribed by Sowerby (J.) in 1822 (*Min. Conch.* 4 : 25, pl. 325) as *Terebratula resupinata* from the Mountain Limestone of Derbyshire. The same species-name *Terebratula*

resupinata was, however, previously used by Sowerby (J.) in 1816 (*Min. Conch.* 2 : 116, pl. 150, figs. 3, 4) for a Middle Lias brachiopod from Ilminster, Somerset.

13. The species name *Terebratula resupinata* J. Sowerby, 1822 (= *Conch. Anomites resupinatus* Martin) is, therefore, preoccupied by *Terebratula resupinata* J. Sowerby, 1816.

14. Confusion would be caused if the name given by Martin to this species were invalidated, since the next use of the trivial name *resupinata* by Sowerby in 1822 in the combination *Terebratula resupinata* for Martin's species, is itself invalid by the previous use of the trivial name *resupinata* for another species in the same combination, *Terebratula resupinata* by Sowerby in 1816.

15. Furthermore, T. N. George and D. A. Ponsford in 1938 (*Trans. Leeds geol. Assoc.* 5(4) : 228) selected a shell figured by Davidson in 1861 (*Mon. Brit. Foss. Brach.* 2(5)(4) : 130, pl. 29, figs. 1, 1a, 1b), from Bolland preserved in the British Museum (Natural History), as a neotype of Martin's species, since Martin's original shell has not been found. This neotype was refigured and described by G. Bond in 1942 (*Proc. geol. Assoc.* 52(4) : 289, pl. 21, figs. A—C).

16. It is therefore recommended that the trivial name *resupinatus* Martin, 1809, in its published form *Anomites resupinatus*, commonly known as *Schizophoria resupinata* should be validated under the Plenary Powers.

(4) & (5) The trivial names "productus" Martin, 1793 and 1809, as published in the combinations "Conchylolithus Anomia (productus)" and "Conchylolithus Anomites (productus)", and "semireticulatus" Martin, 1809, as published in the combination "Conchylolithus Anomites (semireticulatus)"

17. The species name *Conchylolithus Anomites (productus)* Martin, 1809 (*Petrif. derb.* : sign. K[2], pl. 22, figs. 1—3) or *Conchylolithus Anomia (productus)* Martin, 1793 (*Figs. Descr. Petrifications Derb.* : sign. L[3], pl. 22, figs. 1—3) is the name of the nominal species which is the type species of the genus *Productus* Sowerby (J.), 1814 (*Min. Conch.* 1 : 153) by subsequent designation of Thomas (I.) in 1914 (*Mem. geol. Surv. Gt. Brit. (Palaeont.)* 1(4) : 258).

18. The species name *Conchylolithus Anomites semireticulatus* Martin, 1809 (*ibid.* : sign. O[3], pl. 32, figs. 1, 2, 3 and pl. 33, fig. 4) is the name of the nominal species which is the type species of the genus

Dictyoclostus Muir-Wood, 1930 (*Ann. Mag. nat. Hist.* (10)5 : 103) by original designation.

19. In the discussion on his genus *Productus*, Sowerby (J.) (1814, *loc. cit.*) stated—"His (Martin's) *Conch. Anomites productus* is a good type of the Genus, therefore, as the name *Anomites* must be laid aside, I have adopted his specific name as the Generic one . . ." Sowerby renamed Martin's species *C. Anomites productus*, calling it *Productus martini*.

20. Confusion arose, however, owing to Sowerby (J.) having figured three distinct species in 1821 (*Min. Conch.* 4 : pl. 317, figs. 2—4) as *Productus martini*, one of which was said to be intermediate between *P. martini* and *Productus antiquatus*, the latter nominal species being described by Sowerby as possibly Martin's *Anomites semireticulatus* (erroneously quoted as *Anomites* [*sic*] *semistriatus* on page 15).

21. Several later authors regarded *P. martini* and *P. semireticulatus* as synonymous. Dall in 1877 (*Bull. U.S. nat. Mus.* 8 : 58) gave the type species of *Productus* Sowerby as *P. martini* Sow.=*Anomites semireticulatus* Martin+*A. productus* Mart. S. A. Miller in 1889 (*N. Amer. Geol. Palaeont.* : 363) quoted *P. semireticulatus* and *P. longispinus* as types. Oehlert in 1887 (*in Fischer (P.), Manuel de Conchyliol.* (Appendix) : 1277) gave *P. martini* Sowerby=*Anomites productus* Martin as the type, while Hall and Clarke in 1894 (*Eleventh Ann. Rep. State Geol. N.Y.* : 297) quoted *P. semireticulatus* as the type species. Schuchert in 1897 (*Bull. U.S. Geol. Surv.* : 87 : 319) gave the type species as *Anomites productus* Martin=*Productus martini* Sowerby=*Productus semireticulatus* (Martin).

22. Thomas (I.) (1914, *loc. cit.*) was the first to make a clear selection of a type species for *Productus* Sowerby, so selecting *Productus productus* (W. Martin). This was adopted by Chao in 1927 (*Pal. sinica* (B) 5(2) : 26), by Muir-Wood in 1928 (*Mem. geol. Survey Gt. Brit.* (Palaeont.) 3(1) : 235) and by Schuchert and Levene in 1929 (*Foss. Cat.* 1 : 42 Brachiopoda, Generum et Genotyporum Index et Bibliographia) : 100).

23. In 1930 the two species *P. productus* (Martin) and *P. semireticulatus* (Martin) were finally disentangled by Muir-Wood (*Ann. Mag. nat. Hist.* (10)5 : 103), who then selected *P. semireticulatus* (Martin) as the type species of the genus *Dictyoclostus* Muir-Wood. This revision is now generally adopted by authors.

24. The invalidation, for these two species, of the trivial names given to them by Martin would cause considerable confusion in

nomenclature and the disentangling of Sowerby's nominal species, in order to determine the trivial names which would have to replace them, would necessitate a considerable amount of research. There appears, therefore, to be a good case for the validation of the trivial name *productus* Martin, 1809, as published in the combination *Conchylolithus Anomites (productus)* for the species commonly known as *Productus productus* (Martin), and of the trivial name *semireticulatus* Martin, 1809, as published in the combination *Conchylolithus Anomites (semireticulatus)* for the species commonly known as *Dictyoclostus semireticulatus* (Martin).

(6) The trivial name " *crumena* " Martin, 1809, as published in the combination " *Conchylolithus Anomites (crumena)* "

25. The nominal species *Conchylolithus Anomites (crumena)* Martin, 1809 (*Petrif. derb.* : sign. R[1], pl. 36, fig. 4) was assigned to the genus *Camarophoria* (emend. of *Camerophoria*) King, 1850 (*Mon. Perm. Foss. (Palaeont. Soc.)* : 113) by King, 1850 (*ibid.* : 119, footnote). It was subsequently redescribed and figured as *Camarophoria crumena* from the Lower Carboniferous by Davidson in 1861 (*Mon. Brit. Foss. Brach.* 2(5)(3) : 113, pl. 25, figs. 3—9), Martin's figure being reproduced for comparison.

26. Prior to this, however, in 1815, Sowerby (J.) (*Min. Conch.* 1 : 190, pl. 83, figs. 2, 2*, 3) used Martin's trivial name *crumena* in describing the species as *Terebratula crumena*.

27. Sowerby's *T. crumena* includes three unrelated species, two Rhynchonellids from the Jurassic which are both figured in pl. 83, and Martin's Lower Carboniferous species mentioned in the description but not figured by Sowerby. Martin's type specimen is not preserved in the Sowerby collection and is not refigured in pl. 83, fig. 3.

28. In view of this confusion and of Sowerby's misidentification of Martin's species, there appears to be a good case for the validation of the trivial name *crumena*, 1809, as published in the combination *Conchylolithus Anomites (crumena)* for the species commonly known as *Stenoscisma* [olim *Camarophoria*] *crumena* (Martin), since from 1861 onwards when the species was redescribed by Davidson, this trivial name is well established in Carboniferous literature.

(7) The trivial name " *pugnus* " Martin, 1809, as published in the combination " *Conchylolithus Anomites (pugnus)* "

29. In 1793 (*Figs. Descr. Petrifications Derbyshire* : sign. L[4], pl. 22, figs. 4, 5) Martin published the name *Conchylolithus Anomia (quinque-lobatus)*; in 1809 (*Petrif. derb.* : sign. K[4], pl. 22, figs. 4, 5) Martin

republished the above figures, to which on this occasion he assigned the name *Conchyliolithus Anomites (pugnus)*. No reason was given by Martin for this change ; the specific name *Anomites quinquelobatus* is not preoccupied. Thus, if the names published in Martin's two books were available for the purposes of zoological nomenclature, the entirely unknown name *quinquelobatus* Martin, 1793, would replace *pugnus* Martin, 1809, a name which is universally used for this common Lower Carboniferous species of brachiopod.

30. Sowerby (J. de C.) in 1825 (*Min. Conch.* 5 : 155, pl. 497, figs. 1—6) was the next author to describe Martin's species, which he assigned to the genus *Terebratula*. In 1840 (in the alphabetical index to volume 7 of the *Min. Conch.*) Sowerby transferred this species to the genus *Atrypa* Dalman, 1828 (*K. Vetensk-Akad. Handl.*, Stockholm 1827 : 93, 102). Five of the specimens assigned by Sowerby to *Terebratula pugnus* are from Ireland and one from Derbyshire. They belong to more than one species, but none is identical with the species to which Martin applied the trivial names *quinquelobatus* (in 1793) and *pugnus* (in 1809), the holotype of which is still in existence.

31. Thus, if the trivial name *pugnus* Martin, 1809, were not preserved by the International Commission, the name *pugnus*, as from Sowerby (1825), would have to be applied to a species different from that for which it is now universally used, a change which would certainly lead to great confusion. There is therefore a good case for the use by the Commission of its Plenary Powers to validate the trivial name *pugnus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (pugnus)* for use for the species to which it is now always applied.

(8) The trivial name "subconicus" Martin, 1809, as published in the combination "Conchyliolithus Anomites (subconicus)"

32. The species name *Conchyliolithus Anomites (subconicus)* was published by Martin in 1809 (*Petrif. derb.* : sign. Z[2], pl. 47, figs. 6—8). The species so named was first redescribed in 1840 (*Trans. Geol. Soc. Lond.* (2) 5 : pl. 57, fig. 10 and expl.) by Sowerby (J. de C.), who misidentified it from the British Devonian, citing it as *Spirifera subconica* var. Sowerby's figure represents an unrelated species nowadays identified as *Cyrtina heteroclita* (Defrance, 1827). This misidentification was furthered by Phillips in 1841 (*Figs. Descr. Pal. Foss. Cornwall* : 72, pl. 29, fig. 126), while de Koninck in 1843 (*Descr. Anim. foss. Belg.* : 255, pl. 12 bis, figs. 5, 5a, b, c) confused *subconicus* Martin with another unrelated species from the Belgian Lower Carboniferous. The species which de Koninck then erroneously called *Spirifer subconica* is identified nowadays as *Davidsonina septosa* (Phillips, 1836), var. *transversa* (J. W. Jackson).

33. The confusion in regard to the identity of Martin's species was finally cleared up by Davidson in 1858—59 (*Mon. Brit. foss. Brach.* 2(5)(1) : 48, pl. 9, fig. 3) and in 1863 (*ibid.* 2(5)(5) : 224, pl. 52, fig. 4) when an accurate description and illustration of the species were given under the name *Spirifera subconica*.

34. North (F.J.) in 1921 (*Quart. J. geol. Soc. Lond.* 76 : 203) assigned this species to his new genus *Tylothyris* North, 1921 (*ibid.* 76 : 195), applying to it the name *Tylothyris subconica subconica*. At the same time he selected but did not illustrate a neotype.

35. If the name *subconicus* Martin, 1809, were to be treated as unavailable for nomenclatorial purposes, it would not be possible to apply that trivial name, as from a later author, to the species for which it is at present habitually used, since (as shown above) the first author after Martin to make use of this name (J. de C. Sowerby) applied it, as the result of a misidentification, to a different species ; in consequence, it would be necessary to provide this species with a new name. As this is a common British Lower Carboniferous species, such a change of name would certainly cause confusion. There is therefore a good case for the use by the International Commission of its Plenary Powers to validate the trivial name *subconicus* Martin, 1809.

(9) The trivial name "trigonalis" Martin, 1809, as published in the combination "Conchylolithus Anomites (trigonalis)"

36. The species name *Conchylolithus Anomites (trigonalis)* was published by Martin in 1809 (*Petrif. derb.* : sign. Q[2], pl. 36, fig. 1). This trivial name was first republished in 1820 by Sowerby (J.) (*Min. Conch.* 3 : 117, pl. 265, figs. 2, 3). Martin's type specimen is not preserved ; it was not refigured by Sowerby. Sowerby's syntypes, which are extant, are referable not to *Anomites trigonalis* Martin but to a species near *Spirifer bisulcatus* Sowerby (J. de C.), 1825 (*Min. Conch.* 5 : 152).

37. McCoy in 1844 (*Syn. Carb. Limest. Foss. Ireland* : 135) in his description of *Spirifera trigonalis* stated that there were two species—that of Martin and that of Sowerby—confused under this name. These two species were disentangled by Davidson in 1858 (*Mon. Brit. foss. Brach.* 2(5)(1) : 29, pl. 5, figs. 25, 29—33) and 1863 (*ibid.* 2(5)(5) : 222, pl. 50, figs. 3, 4, *nec* 5—9). Later, however, in 1880 (*ibid.* 4(3) : 276, pl. 32, fig. 13 ; pl. 34, figs. 2—5) Davidson again confused this species with other Carboniferous Spirifers. Schwetsov in 1925 (*Bull. Soc. Nat. Moscou* 33 : 155) included Martin's species in his *Spirifer trigonalis* Martin, var. *typica*.

38. We find therefore that on the occasion of the first use, subsequent to Martin (1809), of the trivial name *trigonalis* (namely that by J. de C. Sowerby in 1820) this trivial name was applied not to the species so named by Martin but to another species, and, therefore, that, if the name *trigonalis* Martin, 1809, were not to be validated by the International Commission, it would be necessary to apply it in an entirely unaccustomed sense and at the same time to provide a new name for the species now known as *Spirifer* (or *Fusella*) *trigonalis*. This is a common Lower Carboniferous species and its trivial name *trigonalis* is well established in stratigraphical and palaeontological literature. Any disturbance of that name would certainly give rise to confusion, and there is therefore a good case for the use by the International Commission of its Plenary Powers to validate the trivial name *trigonalis* Martin, 1809, for use in its customary sense.

(10) The trivial name "striatus" Martin, 1809, as published in the combination "Conchyliolithus Anomites (striatus)"

39. The species name *Conchyliolithus Anomites (striatus)* was published by Martin in 1809 (*Petrif. derb.* : sign. L[1], pl. 23, figs. 1, 2). The same trivial name had previously been applied by Martin to the same species in the combination *Conchyliolithus Anomia (striatus)* in 1793 (*Figs. Descr. Petrifications Derbyshire* : sign. M[1], pl. 23, figs. 1, 2 et expl.). This is an extremely well-known species and for nearly 100 years has been treated as the type species of the genus *Spirifer* Sowerby (J.), 1816 (*Min. Conch.* 2 : 41). Under the *Règles*, this usage was incorrect and accordingly in 1924 Muir-Wood submitted an application to the International Commission asking for the use of the Plenary Powers to regularise universally accepted nomenclatorial practice by designating the above species as the type species of *Spirifer* Sowerby. This application was approved by the Commission, whose decision was promulgated in *Opinion* 100 published in 1928 (*Smithson. misc. Coll.* 73 (No. 5) : 9—12). The Commission was not asked on that occasion to validate the trivial name *striatus* Martin (the question of the availability of names in Martin's two books not then being raised as such), the only request put to the Commission, and the only question on which it gave a decision, being concerned with the type species of the genus *Spirifer* Sowerby. The present opportunity is accordingly taken to ask the International Commission to complete the case dealt with in *Opinion* 100 by using its Plenary Powers to validate the trivial name *striatus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (striatus)*.

Recommendations

40. Since we understand from the *Official Record of the Proceedings of the International Commission on Zoological Nomenclature at its Session held in Paris in July 1948* (1950, *Bull. zool. Nomencl.* 4) that

it is the policy of the International Commission and of the International Congress of Zoology to develop the *Official List of Generic Names in Zoology* to the fullest extent possible and since a large part of the case on which the present application is based rests upon the fact that several of the specific trivial names which we ask should be validated are the names of type species of important genera, we recommend that the names of those genera should be placed on the *Official List* for such names at the same time that the trivial names now proposed to be validated are placed on the *Official List of Specific Trivial Names in Zoology*.

41. We accordingly ask the International Commission on Zoological Nomenclature :—

- (1) under the procedure laid down under Section (2) of the Fifteenth Conclusion at the Fourteenth of its Meetings held in Paris in July 1948 (*Bull. zool. Nomencl.* 4 : 452), to use its Plenary Powers to validate the under-mentioned trivial names published by Martin (W.) in 1809 in the work entitled *Petrificata Derbiensia* :—

(i) Class Anthozoa

- (a) *duplicatus* Martin, 1809, *ibid.* : sign. N[4], pl. 30, figs. 1, 2, as published in the combination *Erismatolithus Madreporites (duplicatus)* ;
- (b) *floriformis* Martin, 1809, *ibid.* : sign. V[1], pl. 43, figs. 3, 4, as published in the combination *Erismatolithus Madreporites (floriformis)* ;

(ii) Class Brachiopoda

- (c) *resupinatus* Martin, 1809, *ibid.* : sign. Z[4], pl. 49, figs. 13, 14, as published in the combination *Conchyliolithus Anomites (resupinatus)* ;
- (d) *semireticulatus* Martin, 1809, *ibid.* : sign. O[3], pl. 32, figs. 1—3, pl. 33, fig. 4, as published in the combination *Conchyliolithus Anomites (semireticulatus)* ;
- (e) *productus* Martin, 1809, *ibid.* : sign. K[2], pl. 22, figs. 1—3, as published in the combination *Conchyliolithus Anomites (productus)* ;
- (f) *crumena* Martin, 1809, *ibid.* : sign. R[1], pl. 36, fig. 4, as published in the combination *Conchyliolithus Anomites (crumena)* ;
- (g) *pugnus* Martin, 1809, *ibid.* : sign. K[4], pl. 22, figs. 4, 5, as published in the combination *Conchyliolithus Anomites (pugnus)* ;

- (h) *trigonalis* Martin, 1809, *ibid.* : sign. Q[2], pl. 36, fig. 1, as published in the combination *Conchylolithus Anomites (trigonalis)* ;
- (i) *subconicus* Martin, 1809, *ibid.* : sign. Z[2], pl. 47, figs. 6—8, as published in the combination *Conchylolithus Anomites (subconicus)* ;
- (j) *striatus* Martin, 1809, *ibid.* : sign. L[1], pl. 23, figs. 1, 2 et expl., as published in the combination *Conchylolithus Anomites (striatus)* ;

(2) to place the ten trivial names specified in (1) above on the *Official List of Specific Trivial Names in Zoology*, subject, in the under-mentioned cases, to the addition of the following notes specifying the manner in which the nominal species in question is to be interpreted :—

- (a) *duplicatus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated as fig. 1 on plate 17 in the paper by Stanley Smith published in 1916 (*Quart. J. geol. Soc. Lond.* 71) ;
- (b) *floriformis* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated as figs. 1—3 on plate 19 in the paper by Stanley Smith published in 1916 (*Quart. J. geol. Soc. Lond.* 71) ;
- (c) *resupinatus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated as figs. 1, 1a, 1b, on plate 29 in the portion of Davidson's monograph published in 1861 (*Mon. brit. foss. Brach.* 2(5)(4) (specimen refigured by Bond in 1942, *Proc. geol. Assoc.* 52(4) : 289, pl. 21, figs. A—C) ;
- (d) *crumena* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimens illustrated as figs. 3—8 on pl. 25 in the portion of Davidson's monograph published in 1861 (*Mon. brit. foss. Brach.* 2(5)(3)) ;
- (e) *subconicus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated by Davidson in 1859 as fig. 3 on plate 9 (*Mon. brit. foss. Brach.* 2(5)(1)) ; and as fig. 4 on plate 52 (*ibid.* 2(5)(5)) published in 1863 ;
- (f) *trigonalis* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated as fig. 25 on plate 5 and as figs. 3—4 on plate 50 of Davidson's monograph published in 1858 and 1863 (*Mon. brit. foss. Brach.* 2) ;

- (g) *pugnus* Martin, 1809 : the nominal species so named to be interpreted by reference to Martin's type specimen (No. B.61451 in Brit. Mus. (Nat. Hist.)) illustrated by Muir-Wood in 1951 (*Ann. Mag. nat. Hist.* (12) 4 : pl. 4, figs. 3a—c) ;
- (h) *striatus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen illustrated in 1820 by Sowerby (J.), as upper figure on plate 270 (err. as 170) of *Min. Conch.* 3. (Specimen preserved in the Coll. Brit. Mus. (Nat. Hist.) No. B.61016) ;
- (i) *semireticulatus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen (No. B.3685 in Brit. Mus. (Nat. Hist.)) illustrated as figs. 2a—c on pl. 4 in 1928 by Muir-Wood (*Mem. geol. Surv. Gt. Brit.* (Palaeont) 3(1)) ;
- (j) *productus* Martin, 1809 : the nominal species so named to be interpreted by reference to the specimen (No. 32453 in Geological Survey Museum) illustrated in 1928 as figs. 1a—d on pl. 1 by Muir-Wood (*Mem. geol. Surv. Gt. Brit.* 3(1)).
- (3) to place the under-mentioned generic names on the *Official List of Generic Names in Zoology* :—
- (a) *Lonsdaleia* McCoy, 1849, *Ann. Mag. nat. Hist.* (2) 3 : 11 (type species, by original designation : *Erismatolithus Madreporites duplicatus* Martin, 1809, as proposed, under (1)(a) above, to be validated under the Plenary Powers, the nominal species so named to be interpreted as specified in (2)(a) above) (Class Anthozoa) ;
- (b) *Schizophoria* King, 1850, *Mon. Perm. Foss.* (Palaeont. Soc.) : 105, 106 (type species, by original designation : *Conchyliolithus Anomites resupinatus* Martin, 1809, as proposed under (1)(c) above, to be validated under the Plenary Powers, the nominal species so named to be interpreted as specified in (2)(c) above) (Class Brachiopoda) ;
- (c) *Productus* Sowerby (J.), 1814, *Min. Conch.* 1 : 153 (type species, by subsequent selection by Thomas (I.), 1914 (*Mem. geol. Survey Gt. Brit.* (Palaeont.) 1(4) : 258) : *Conchyliolithus Anomites productus* Martin, 1809, as proposed, under (1)(e) above, to be validated under the Plenary Powers) (Class Brachiopoda) ;
- (d) *Dictyoclostus* Muir-Wood, 1930, *Ann. Mag. nat. Hist.* (10) 5 : 103 (type species, by original designation : *Conchyliolithus Anomites semireticulatus* Martin, 1809, as proposed, under (1)(d) above, to be validated under the Plenary Powers) (Class Brachiopoda) ;

- (4) to amend the entry in relation to the name *Spirifer* Sowerby (J.), 1816, made in the *Official List of Generic Names in Zoology* under *Opinion* 100, as supplemented by the decision taken in 1948 that every generic name for which the Plenary Powers are used is to be placed on the foregoing *List* (1950, *Bull. zool. Nomencl.* 4 : 267), to read as follows :—

Spirifer Sowerby (J.), 1816, *Min. Conch.* 2 : 41 (type species, by designation under the Plenary Powers (*Opinion* 100) : *Conchylolithus Anomites striatus* Martin, 1809 (as proposed, under (1)(j) above, to be validated under the Plenary Powers)) (Class Brachiopoda) ;

- (5) to place the under-mentioned trivial names on the *Official Index of Rejected and Invalid Specific Trivial Names in Zoology* :

(a) *conaxis* McCoy, 1849, *Ann. Mag. nat. Hist.* (2) 3 : 10, pl. 49, as published in the combination *Strombodes conaxis* (trivial name of a nominal species, the holotype of which is the specimen, by which, as specified in (2)(b) above, the nominal species *Erismatolithus Madreporites floriformis* Martin, 1809, as proposed, under (1)(b) above, to be validated under the Plenary Powers, is to be interpreted) ;

(b) *semistriatus* Sowerby (J.), 1821, *Min. Conch.* 4 : 15, as published in the combination *Annomites* [sic] *semistriatus* (a *faute de transcription* for “*Anomites semireticulatus*” Martin, 1809).

II.—THE SUBSEQUENT HISTORY OF THE CASE

2. Registration of the present application : At the time of the commencement of the preliminary correspondence which led up to the submission of the present application, the Registered Number Z.N.(S.) 461 was allotted to the problem involved in the suggested validation under the Plenary Powers of certain of the names for species of the Classes Anthozoa and Brachiopoda published by Martin in 1809 in his *Petrificata Derbiensia*.

3. Publication of the present application : After the submission of the present application discussion was necessary in regard to various minor matters. This was completed in April 1951 and the present application was thereupon sent to the printer. Publication took place on 28th September 1951, the present application appearing in Part 1 of volume 6 of the *Bulletin of Zoological Nomenclature* (Muir-Wood & Stubblefield, 1951, *Bull. zool. Nomencl.* **6** : 7—17).

4. Issue of Public Notices : Under the revised arrangements approved by the Thirteenth International Congress of Zoology, Paris, 1948 (1950, *Bull. zool. Nomencl.* **4** : 51—56), Public Notice of the possible use by the International Commission on Zoological Nomenclature of its Plenary Powers in the present case was given on 28th September 1951, both in Part 1 of volume 6 of the *Bulletin of Zoological Nomenclature* (the Part in which the present application was published) and also to the prescribed serial publications. In addition, such Notice was given also to a number of general zoological serial publications and to certain palaeontological serials in Europe and America.

5. Comments received : The issue of the Public Notices referred to in paragraph 4 above elicited support for the action proposed from one specialist in Germany, from two specialists in the United Kingdom and from an organised group of palaeontologists in the United States. The communications so received are reproduced in the immediately following paragraphs. No objection was received from any source.

6. Support received from Dr. Herta Schmidt (Natur-Museum u. Forschungs-Institut Senckenberg, Senckenberg-Anlage, Frankfurt a.M., Germany) : On 1st November 1951 Dr. Herta Schmidt (*Natur-Museum u. Forschungs-Institut Senckenberg, Frankfurt a.M.*) indicated as follows her support for the present application (Schmidt (H.), 1952, *Bull. zool. Nomencl.* **6** : 219) :—

Soweit die Vorschläge Brachiopoden betreffen, stimme ich ihnen zu.

7. Support received from Dr. Stanley Smith (University of Bristol, Bristol, England) : On 24th November 1951 Dr. Stanley Smith (*University of Bristol, England*) addressed the following letter to the Commission in support of the present application (Smith (S.), 1952, *Bull. zool. Nomencl.* **6** : 219) :—

I wish to support the application made to the International Commission on Zoological Nomenclature by Dr. H. Muir-Wood and Dr. C. J. Stubblefield to validate the trivial names of certain Carboniferous corals and brachiopods published by William Martin, 1809, in *Petrificata Derbiensia* specified by them in *Bulletin Zoological Nomenclature*, vol. 6, Pt. 1, September, 1951.

The names in question have been in constant use for a very long time, and to discard them now would give rise to serious difficulties and confusion.

8. Support received from Dr. J. Shirley (University of Durham, King's College, Newcastle-upon-Tyne, England) : On 10th January 1952 Dr. J. Shirley (*University of Durham, King's College, Newcastle-upon-Tyne*) addressed the following letter to the Commission in support of the present application (Shirley, 1952, *Bull. zool. Nomencl.* **6** : 219—220) :—

The dropping of Martin's work on the Carboniferous Limestone Fossils of Derbyshire (1809) for the purpose of nomenclature, comes as a shock to those engaged on the palaeontology and stratigraphy of this system and I would like urgently to support the efforts of Drs. Stubblefield and Muir-Wood to reinstate some of Martin's names. In my opinion his names were strictly binominal since the prefix *Conchyolithus* meant nothing more than that the shell was fossil and the above workers' quotation from Martin (1951, *Bull. zool. Nomencl.* **6** : 7) drives this point home. It is true that the descriptions are inadequate for modern purposes, but many of the illustrations are very good for their time, and there is little difficulty in recognising almost all the species among collections of specimens from Derbyshire.

I would particularly like to support the use of the Plenary Powers of the Commission (Z.N.(S.) 461) in the matter of the species there listed. As an example of their frequency in the literature, I have taken the *Quarterly Journal of the Geological Society* back to 1940 and listed the articles in which they are mentioned as definite identification.

Out of seven papers on the Lower Carboniferous, the species are mentioned, generally frequently, in the number of papers given :—

<i>duplicatus</i>	2	<i>floriformis</i>	4	<i>resupinatus</i>	4
<i>semireticulatus</i>	4	<i>productus</i>	1	<i>crumena</i>	1
<i>pugnus</i>	3	<i>trigonalis</i>	5	<i>subconicus</i>	0
<i>striatus</i>	3				

Only one species receives no mention in these papers. This is for only one journal. I think it would be true to say that it is almost impossible to pick up any general work on the stratigraphy-palaeontology of the British Lower Carboniferous which does not mention as definite identifications some of the species of Martin, and you can imagine the confusion which would arise if Martin's species names were dropped.

9. Support received from the Joint Committee on Zoological Nomenclature for Paleontology in America : On 9th April 1952 there was received the following letter dated 18th February 1952, in which Professor G. Winston Sinclair (then of the *University of Michigan, Ann Arbor, Michigan, U.S.A.*), Chairman of the Joint Committee on Zoological Nomenclature for Paleontology in America, reported that nine members of the Committee supported the present application, while two were opposed to it :—

The Joint Committee on Zoological Nomenclature for Paleontology in America has considered this subject, and I wish to inform you that, being polled, they voted : To support the petitions (9) :—Katherine V. W. Palmer ; A. Myra Keen ; G. Winston Sinclair ; J. Marvin Weller ; R. C. Moore ; John B. Reeside, Jr. ; Bobb Schaeffer ; Bryan Patterson ; Simon W. Muller. To oppose the petition (2) :—John W. Wells ; Don L. Frizzell.

III.—THE DECISION TAKEN BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

10. Issue of Voting Paper V.P.(52)42 : On 15th May 1952, a Voting Paper (V.P.(52)42) was issued in which the Members of

the Commission were invited to vote either for, or against, the proposal "relating to the names of certain species and genera in the Classes Anthozoa and Brachiopoda as set out in Points (1) to (5) on pages 15 to 17 of volume 6 of the *Bulletin of Zoological Nomenclature* (i.e. in the concluding paragraph of the application reproduced in the first paragraph of the present *Opinion*).

11. The Prescribed Voting Period for Voting Paper V.P.(52)42 :
As the foregoing Voting Paper was issued under the Three-Month Rule, the Prescribed Voting Period closed on 15th August 1952.

12. Particulars of the Voting on Voting Paper V.P.(52)42 : At the close of the Prescribed Voting Period the state of the voting on Voting Paper V.P.(52)42 was as follows :—

(a) *Affirmative Votes had been given by the following fifteen (15) Commissioners (arranged in the order in which Votes were received) :*

Hering ; Calman ; Dymond ; Hankó ; Bonnet ; Vokes ;
do Amaral ; Pearson ; Bradley ; Hemming ; Esaki ;
Riley ; Lemche ; Stoll ; Boschma ;

(b) *Negative Votes, one (1) :*

Cabrera ;

(c) *On Leave of Absence, one (1) :*

Mertens ;

(d) *Voting Papers not returned, one (1) :*

Jaczewski.

13. Declaration of Result of Vote on Voting Paper V.P.(52)42 : On 23rd August 1952, Mr. Hemming, Secretary to the International Commission, acting as Returning Officer for the Vote taken on Voting Paper V.P.(52)42, signed a Certificate that the Votes cast were as set out in paragraph 12 above and declaring that the proposal submitted in the foregoing Voting Paper had been duly adopted and that the decision so taken was the decision of the International Commission in the matter aforesaid.

14. Supplementary applications submitted in 1954 by Dr. Helen Muir-Wood and Dr. C. J. Stubblefield : In April 1954 Dr. Helen Muir-Wood and Dr. C. J. Stubblefield (the original applicants in the present case) notified the Office of the Commission that, having regard to the decision by the Fourteenth International Congress of Zoology, Copenhagen, 1953, to incorporate in the *Règles* provisions recognising the concept of neotypes as a category of type specimen, they had come to the conclusion that in those cases where they had originally asked that the Commission should direct that given species should be interpreted by reference to specified previously published figures it would be preferable if the Commission would now direct that the species concerned should be interpreted by neotypes. In due course supplementary applications in this sense were submitted both by Dr. Muir-Wood and by Dr. Stubblefield. In her supplementary application Dr. Muir-Wood asked that in the case of six out of the eight nominal species of the Class Brachiopoda, the names of which had been dealt with in her original application, neotypes should be recognised by the Commission. In two cases unofficial neotypes had previously been established by other specialists and these Dr. Muir-Wood asked should now be officially recognised. In the remaining cases the neotypes suggested were either specimens, figures of which she had previously proposed that the Commission should make the sole standard of reference for the identification of the species concerned or other historical specimens of similar origin which for various reasons she had now concluded were more suitable for designation as neotypes. Dr. Stubblefield's original application had been concerned with two species of the Class Anthozoa, for both of which unofficial neotypes had previously been designated, and in that application Dr. Stubblefield had asked

that figures of the specimens so designated should be made the sole standard of reference for the species concerned. In his supplementary application Dr. Stubblefield asked that in place of his earlier recommendation the neotypes themselves should now be formally recognised. Dr. Muir-Wood's supplementary application is annexed to the present *Opinion* as Appendix 1, and that by Dr. Stubblefield as Appendix 2.

15. Submission to the Commission in October 1955 of proposals based upon the supplementary applications received from Dr. Muir-Wood and Dr. Stubblefield respectively : On 12th October 1955, Mr. Hemming, as Secretary, submitted to the Commission the following paper in which he set forth proposals designed to give effect to the supplementary applications received from Dr. Helen Muir-Wood and Dr. C. J. Stubblefield respectively and in which he took the opportunity to correct a minor slip in the original application regarding the manner in which the nominal species *Conchylolithus Anomites productus* Martin, 1809, had become the type species of the nominal genus *Productus* Sowerby (J.), 1814 :—

Supplementary proposals consequential on the validation under the Plenary Powers of certain specific names in the Classes Anthozoa and Brachiopoda originally published by Martin (W.), 1809, in the work "Petrificata Derbiensia", since rejected by the International Commission for nomenclatorial purposes

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

The present paper is concerned with certain proposals of a procedural character which have been submitted by Dr. Helen Muir-Wood (*British Museum (Natural History), London*) and Dr. C. J. Stubblefield (*Geological Survey and Museum, London*) in relation to an application submitted by them for the validation under the Plenary Powers of certain specific names in the Classes Brachiopoda and Anthozoa which were originally published by Martin (W.) in 1809, in his work entitled *Petrificata Derbiensia*, which has since been rejected by the Commission for nomenclatorial purposes (Muir-Wood & Stubblefield, 1951, *Bull. zool. Nomencl.* 6 : 7—17). The relevant facts are set out below.

2. The application referred to above was approved unanimously by the Commission in 1952 in its vote on Voting Paper V.P.(52)42. The question which now arises is in connection with the form in which the foregoing decision is to be recorded. In the case of each of the ten specific names validated as from Martin, 1809, by the decision referred to above, the applicants asked that the Commission, when placing the names concerned on the *Official List of Specific Names in Zoology*, should give express directions as to how the nominal species in question were to be interpreted. In two cases, those relating to the names *pugnus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (pugnus)*, and *productus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (productus)* no problem arises, for in these instances Martin's holotypes are still in existence. In the remaining eight cases the Commission was asked to direct, and did so direct, that the species concerned should be identified by reference to certain specified previously published figures.

3. Although the Commission took its decision in this case in 1952, pressure of work made it impossible for this Office to prepare the requisite *Opinion* prior to the opening of the Fourteenth International Congress of Zoology at Copenhagen in 1953. After that Congress Dr. Muir-Wood and Dr. Stubblefield took the view that the formal situation had been changed by the decision of that Congress to include in the *Règles* provisions recognising the concept of neotypes as a category of type specimen and they notified this Office that they considered that in these circumstances it was desirable that in the *Opinion* embodying the decision taken by the Commission in this case the portion of that decision linking the specific names in question to particular published figures should be replaced by a decision that the species concerned should be interpreted by neotypes. Dr. Muir-Wood and Dr. Stubblefield have accordingly each submitted proposals to this end, so far as concern the names dealt with the portions of the original application for which they were respectively responsible.

4. Full particulars of the neotypes now proposed to be accepted are given in the supplementary applications received. The following is a summary of the principal points :—

- (1) In four cases it is proposed that the species concerned should be interpreted by reference to neotypes which were unofficially designated as such before the Copenhagen Congress gave official recognition to the neotype concept. The species concerned are *duplicatus* and *floriformis* (Class Anthozoa) and *resupinatus* and *subconicus* (Class Brachiopoda). The neotypes concerned are of long standing, those for the two first species having been designated by Stanley Smith in 1916, that for *resupinatus* by George & Ponsford in 1938 and that for *subconicus* by North in

1921. In the first three cases the neotypes now proposed to be accepted are the specimens, figures of which the Commission has already agreed should be the standard of reference for the species concerned. In the case of *subconicus*, no figure was published by North and it was for this reason that in the original application it was proposed that this species should be interpreted by reference to one of Davidson's figures. Arrangements have now been made for the publication of a figure of North's neotype and it is accordingly proposed that that neotype be substituted for the figure by Davidson originally proposed as the standard of reference.

- (2) In two cases Dr. Muir-Wood in the proposal now submitted has designated as neotypes the specimens, figures of which the Commission has already agreed should be the standard of reference for the species concerned. These species are :—*trigonalis* and *striatus* (Class Brachiopoda). In the case of the first of these species figures by Davidson of several specimens were cited in the original application. The specimen now selected as the neotype is the last of these, i.e. that figured on plate 50, fig. 4, which is also the same specimen as that previously shown (1858) as fig. 33 on plate 5 of his *Monograph*.
- (3) In the case of the two remaining names, both of which are of species in the Class Brachiopoda, Dr. Muir-Wood designated neotypes in the application now submitted but in these cases, unlike those discussed under (2) above, the specimens so designated are not those on which were based the figures which in the original application it was proposed should be taken as the standard of reference for the species concerned, those specimens not being considered suitable in every respect for designation as neotypes. The species here concerned are :—(1) *crumena*, the neotype designated for which is the specimen figured by Davidson in 1863 as plate 54, fig. 18. (2) *semireticulatus*, the neotype designated for which is the specimen figured by Muir-Wood in 1928 as text fig. 19.
- (4) Of the eight neotypes here concerned, five (*resupinatus*, *crumena*, *trigonalis*, *striatus*, *semireticulatus*) are in the British Museum (Natural History), two (*duplicatus*, *floriformis*) are in the Sedgwick Museum, Cambridge University, and one (*subconicus*) is in the National Museum of Wales, Cardiff.

5. Full particulars have been furnished by Dr. Muir-Wood and Dr. Stubblefield respectively regarding such matters as the labels

attached to, or associated with, the neotypes concerned in the present application.

6. The present occasion is taken also to correct a minor error in the portion of the original application relating to the generic name *Productus* Sowerby, 1814. It was there stated that the species *Conchyliolithus Anomites productus* Martin, 1809, had been selected as the type species of the foregoing genus by Thomas in 1914. This statement was correct, but by an oversight it was not noted that the type species of this genus was automatically the above species by absolute tautonymy under Rule (d) in Article 30 and that in consequence Rule (g) (type species by subsequent selection) was not applicable in this case.

7. In the circumstances I recommend the International Commission :

- (1) to approve the proposals submitted by Dr. Muir-Wood and Dr. Stubblefield respectively that in the case of the eight specific names originally published in 1809 in Martin's *Petrificata Derbiensia* specified in paragraph 4 above, which the Commission by its Vote on Voting Paper V.P.(52)42 has validated under its Plenary Powers as from the above author and date, the directions as to the interpretation of the species concerned by reference to previously published figures be replaced by a direction recognising the neotypes which, as explained in paragraph 3, have been established for those species, in the case of the two nominal species belonging to the Class Anthozoa, by Dr. Stanley Smith, and, in the case of the six nominal species belonging to the Class Brachiopoda, by George & Ponsford (one neotype), by North (one neotype) and Dr. Muir-Wood (four neotypes) ;
- (2) to insert in the Ruling to be given in the *Opinion* embodying the decision taken by the Commission in its vote on the Voting Paper specified in (1) above, a note to the entry relating to the specific names *productus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (productus)* and *pugnus* Martin, 1809, as published in the combination *Conchyliolithus Anomites (pugnus)*, which by that vote were validated under the Plenary Powers, stating that Martin's holotypes of those species are now preserved in the British Museum (Natural History) in the White Watson Collection ;
- (3) to amend the entry on the *Official List of Generic Names in Zoology* relating to the generic name *Productus* Martin, 1809, to be made in the Ruling in the *Opinion* referred to above, so as to record that the nominal species *Conchyliolithus Anomites productus* Martin, 1809, became the type species

of the foregoing genus by absolute tautonymy under Rule (d) in Article 30 instead of by subsequent selection under Rule (g) in the foregoing Article as inadvertently stated in the original application relating to this name.

16. Issue of Voting Paper V.P.(O.M.)(55)33 : On 12th October 1955 a Voting Paper (V.P.(O.M.)(55)33) was issued in which the Members of the Commission were invited to vote either for, or against, “ (a) the proposals submitted respectively by Dr. Helen Muir-Wood and Dr. C. J. Stubblefield summarised in Point (1) in paragraph 7 of the paper bearing the Number Z.N.(S.) 461 submitted by the Secretary simultaneously with the present Voting Paper [i.e. in paragraph 7 of the paper reproduced in paragraph 15 of the present *Opinion*], namely that the two nominal species belonging to the Class Anthozoa and the six nominal species belonging to the Class Brachiopoda specified in paragraph 4 of the above paper, the names of which have already been validated under the Plenary Powers by the vote taken on Voting Paper V.P.(52) 42, be interpreted by the neotypes which have been designated therefore, this decision to replace the at present unpromulgated decision taken on the foregoing Voting Paper (a decision which was taken prior to the incorporation into the *Règles* of provisions recognising the concept of neotypes as a category of type specimen) that the nominal species concerned should be interpreted by reference to certain specified previously published figures, and (b) the proposals specified in Points (2) and (3) in paragraph 7 of the paper referred above submitted by the Secretary for the purpose of securing, in the one case, a clarification, and, in the other case, a minor adjustment of the proposals originally submitted in the present case ”.

17. The Prescribed Voting Period for Voting Paper V.P.(O.M.) (55)33 : As the foregoing Voting Paper was issued under the One-Month Rule, the Prescribed Voting Period closed on 12th November 1955.

18. Particulars of the Voting on Voting Paper V.P.(O.M.) (55)33 : At the close of the Prescribed Voting Period, the state of the voting on Voting Paper V.P.(O.M.)(55)33 was as follows² :—

(a) *Affirmative Votes had been given by the following twenty-three (23) Commissioners (arranged in the order in which Votes were received) :*

Hering ; Holthuis ; Lemche ; Vokes ; Stoll ; Esaki ;
 Boschma ; Riley ; Miller ; Bradley (J.C.) ; Prantl ;
 Mayr ; Jaczewski ; Tortonese ; do Amaral ; Dymond ;
 Hemming ; Bonnet ; Mertens ; Cabrera ; Key ;
 Kühnelt ; Hankó ;

(b) *Negative Votes, one (1) :*

Sylvester-Bradley ;

(c) *On Leave of Absence, one (1) :*

Bodenheimer ;

² During the interval between the taking of the vote on Voting Paper V.P.(52)42 and of the vote on Voting Paper V.P.(O.M.) (55)33, the Commission had suffered two losses in its Membership, Commissioner W. T. Calman having died and Commissioner Joseph Pearson having retired. During the same period the following nine zoologists had been elected to the membership of the Commission :—

Mr. P. C. Sylvester-Bradley (*Sheffield University, Sheffield, England*) (12th August 1953)

Dr. L. B. Holthuis (*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*) (12th August 1953)

Dr. K. H. L. Key (*Commonwealth Scientific and Industrial Research Organisation, Canberra, A.C.T., Australia*) (15th October 1954)

Dr. Alden H. Miller (*Museum of Vertebrate Zoology, University of California, U.S.A.*) (29th October 1954)

Doc. Dr. Ferdinand Prantl (*Národní Museum v Praze, Prague, Czechoslovakia*) (30th October 1954)

Professor Dr. Wilhelm Kühnelt (*Zoologisches Institut der Universität, Vienna, Austria*) (6th November 1954)

Professor F. S. Bodenheimer (*The Hebrew University, Jerusalem, Israel*) (11th November 1954)

Professor Ernst Mayr (*Museum of Comparative Zoology at Harvard College, Cambridge, Massachusetts, U.S.A.*) (4th December 1954)

Professor Enrico Tortonese (*Museo di Storia Naturale "G. Doria", Genova, Italy*) (16th December 1954)

(d) *Voting Paper not returned* :

None.

19. Declaration of Result of Vote on Voting Paper V.P.(O.M.) (55)33 : On 12th November 1955, Mr. Hemming, Secretary to the International Commission, acting as Returning Officer for the Vote taken on Voting Paper V.P.(O.M.)(55)33, signed a Certificate that the Votes cast were as set out in paragraph 18 above and declaring that the proposal submitted in the foregoing Voting Paper had been duly adopted and that the decision so taken was the decision of the International Commission in the matter aforesaid.

20. Preparation of the Ruling given in the present "Opinion" : On 4th March 1956 Mr. Hemming prepared the Ruling given in the present *Opinion* and at the same time signed a Certificate that the terms of that Ruling were in complete accord with those of the proposal approved by the International Commission in its Vote on Voting Paper V.P.(52)42, as supplemented and, in part, amended by the Vote taken on Voting Paper V.P.(O.M.)(55)33.

21. Original References : The following are the original references for the generic names placed or confirmed on the *Official List of Generic Names in Zoology* by the Ruling given in the present *Opinion* and of the specific names placed by that Ruling on the *Official List of Specific Names in Zoology*, and on the *Official Index of Rejected and Invalid Specific Names in Zoology* :—

conaxis, *Strombodes*, M^cCoy, 1849, *Ann. Mag. nat. Hist.* (2)
3 : 10, pl. 49

crumena, *Conchyliolithus Anomites*, Martin, 1809, *Petrif. derb.*
: sign. R[1], pl. 36, fig. 4

Dictyoclostus Muir-Wood, 1930, *Ann. Mag. nat. Hist.* (10)
5 : 103

duplicatus, *Erismatolithus Madreporites*, Martin, 1809, *Petrif. derb.* : sign. N[4], pl. 30, figs. 1, 2

floriformis, *Erismatolithus Madreporites*, Martin, 1809, *Petrif. derb.* : sign. V[1], pl. 43, figs. 3, 4

Lonsdaleia M^cCoy, 1849, *Ann. Mag. nat. Hist.* (2) 3 : 11

Productus Sowerby (J.), 1814, *Min. Conch.* 1 : 153

productus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. K[2], pl. 22, figs. 1—3

pugnus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. K[4], pl. 22, figs. 4, 5

resupinatus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. Z[4], pl. 49, figs. 13, 14

Schizophoria King, 1850, *Mon. Perm. Foss.* (Palaeont. Soc.) : 105, 106

semireticulatus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. O[3], pl. 32, figs. 1—3, pl. 33, fig. 4

semistriatus, *Anomites* [sic], Sowerby (J.), 1821, *Min. Conch.* 4 : 15

Spirifer Sowerby (J.), 1816, *Min. Conch.* 2 : 41

striatus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. L[1], pl. 23, figs. 1, 2 *et explic.*

subconicus, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : Z[2], pl. 47, figs. 6—8

trigonalis, *Conchylolithus Anomites*, Martin, 1809, *Petrif. derb.* : sign. Q[2], pl. 36, fig. 1

22. Family-Group-Name Questions : The application dealt with in the present *Opinion* was published in the *Bulletin of Zoological Nomenclature* prior to the establishment of the *Official List of Family-Group Names in Zoology* by the Fourteenth International Congress of Zoology, Copenhagen, 1953. It has been ascertained that an addition, or additions, to the foregoing *Official List* and/or to the corresponding *Official Index of Rejected and Invalid Family-Group Names in Zoology* will need to be made in order to complete the action, which, under the General Directives given to the International Commission by the International Congress of Zoology, is required to be taken in the

present case. This question is now being examined on a separate File to which the Registered Number Z.N.(G.) 128 has been allotted.

23. At the time of the submission of the present application the name applicable to the second portion of a binomen was "trivial name". This was altered to "specific name" by the Fourteenth International Congress of Zoology, Copenhagen, 1953, which at the same time made corresponding changes in the titles of the *Official List* and *Official Index* of names of this category. These changes in terminology have been incorporated in the Ruling given in the present *Opinion*.

24. The prescribed procedures were duly complied with by the International Commission on Zoological Nomenclature in dealing with the present case, and the present *Opinion* is accordingly hereby rendered in the name of the said International Commission by the under-signed Francis Hemming, Secretary to the International Commission on Zoological Nomenclature, in virtue of all and every the powers conferred upon him in that behalf.

25. The present *Opinion* shall be known as *Opinion* Four Hundred and Nineteen (419) of the International Commission on Zoological Nomenclature.

DONE in London, this Fourth day of March, Nineteen Hundred and Fifty-six.

*Secretary to the International Commission
on Zoological Nomenclature*

FRANCIS HEMMING

APPENDICES

APPENDIX 1.—Request for the substitution of neotypes as the standard of reference for six nominal species belonging to the Class Articulata (Phylum Brachiopoda), the names published for which by Martin (W.) in 1809 have been validated by the International Commission on Zoological Nomenclature, in place of the figures previously proposed for adoption as such standards. By Helen M. Muir-Wood, D.Sc., British Museum (Natural History), London

APPENDIX 2.—Request for the substitution of neotypes in place of previously published figures as the standard of reference for identifying two species of the Class Anthozoa, the names published for which by Martin (W.) in 1809 have been validated by the International Commission on Zoological Nomenclature under its Plenary Powers. By C. J. Stubblefield, Sc.D., F.R.S., Geological Survey and Museum, London.

APPENDIX 1

REQUEST FOR THE SUBSTITUTION OF NEOTYPES AS
THE STANDARD OF REFERENCE FOR SIX NOMINAL
SPECIES BELONGING TO THE CLASS ARTICULATA
(PHYLUM BRACHIOPODA), THE NAMES PUB-
LISHED FOR WHICH BY MARTIN (W.) IN 1809
HAVE BEEN VALIDATED BY THE INTER-
NATIONAL COMMISSION ON ZOOLOGICAL
NOMENCLATURE, IN PLACE OF THE
FIGURES PREVIOUSLY PROPOSED FOR
ADOPTION AS SUCH STANDARDS

By HELEN M. MUIR-WOOD, D.Sc.
(*British Museum (Natural History), London*)

The present is in the nature of a supplementary application to the International Commission on Zoological Nomenclature in relation to six of the nominal species of Brachiopoda named by Martin (W.) in his *Petrificata Derbiensia*, for the validation of which by the Commission under its Plenary Powers I submitted a request in 1950 in an application in which also Dr. C. J. Stubblefield (*Geological Survey and Museum, London*) asked for corresponding action in relation to the specific names for two species of Anthozoa published by Martin in the foregoing work (Muir-Wood & Stubblefield, 1951, *Bull. zool. Nomencl.* 6 : 7—17). This application, as I have been notified informally by the Secretary, has now been approved by the Commission but I understand that owing to the need for preparing *Opinions* embodying decisions taken by the Commission at earlier dates in regard to other cases it may be some time before it will be possible to prepare an *Opinion* embodying its decision in the present case.

2. At the time of the submission of the foregoing application the only means open to the Commission for linking in a definitive

manner a given specific name to a given taxonomic unit in cases where specialists in the group concerned were of the opinion that the establishment of such a link was desirable in the interest of nomenclatorial stability was for it to direct that the taxon represented by the nominal species concerned should be that represented by some previously published figure or description. Accordingly, in the present case I asked the Commission to adopt this procedure in the case of seven of the specific names originally published by Martin which I then asked should be validated under the Plenary Powers. Since the submission and approval by the Commission, of the application so submitted, the position has been altered by the decision by the Fourteenth International Congress of Zoology, Copenhagen, 1953, to incorporate provisions in the *Règles* recognising the concept of neotypes. The proposals previously submitted in regard to the Brachiopod names in question amounted in all but name to the designation of neotypes for those species and I feel that in the altered circumstances it would be much more satisfactory that the Ruling to be given by the Commission embodying the decision which it has already taken in this case should provide that the specimens to be taken as the standard of reference for the identification of the species in question should be formally recognised as neotypes of the species concerned. As will be seen, this will involve in some cases minor adjustments in the proposals previously submitted.

3. With the exception of the neotype for *Conchyliolithus Anomites subconicus* Martin, 1809, which is in the National Museum of Wales, Cardiff, all the neotypes discussed in the present application are preserved in the collection of the British Museum (Natural History), London.

4. All the neotypes in the British Museum discussed in the following paragraphs are marked with a capital letter "N" enclosed in a circle. This mark is written in Indian ink on the green spot label of the specimen concerned.

(1) *Conchyliolithus Anomites resupinatus* Martin, 1809

5. The proposal submitted is that the Commission should give official recognition to the neotype "unofficially" designated

for *Conchyliolithus Anomites resupinatus* Martin, 1809, by George (T.N.) & Ponsford (D.A.) in 1938 (*Trans. Leeds geol. Ass.* 5(4) : 288). The specimen so selected is a shell figured by Davidson in 1861 (*Mon. Brit. Foss. Brach.* 2(5)(4) : 130, pl. 29, figs. 1, 1a, 1b) from Bolland now in the British Museum (Natural History). This specimen was refigured by Bond (G.) in 1942 (*Proc. geol. Ass.* 52(4) : 289, pl. 21, figs. A—C). Bond's figures are photographs and are probably more accurate than Davidson's original drawings.

6. The labels accompanying the above neotype are the following :—

- (a) “ *Orthis resupinata* Martin sp., Carboniferous Limestone, Bolland. Davidson's *Mon. Brit. Carb. Brach.* t. 29, f. 1. Gilbertson Coll. Regd. no. B.384 ”

Note : Eleven specimens were originally given the number “ B.384 ”. The specimen figured by Davidson was later re-registered and given the number “ BB.2420 ”.

- (b) The following are the labels on the front and back respectively of the tablet on which the specimen is mounted :—

(i) *On the front* : As in (a) above, except that the word “ Yorkshire ” is added after the word “ Bolland ”, together with the following reference : *Mon. Pal. Soc.* 1861, vol. 2, pl. 29, f. 1, p. 130. BB.2420.

(ii) *At the back* : “ Figd. G. Bond *Proc. Geol. Assoc.* LII, 1942, pl. xxi, figs. A—C, p. 289. Selected as neotype by George & Ponsford, *Trans. Leeds Geol. Assoc.* 5(4) 1938 : 228 ”

7. The following labels are affixed to the specimen :—

- (a) Oval yellow number label BB.2420 (Official Registration Number) ;

- (b) Round green spot indicating a figured specimen with a capital letter " N " written in Indian ink indicating that the specimen is a neotype ;
- (c) The number " 279 " written on the specimen in black ink. (This may possibly be the Gilbertson Coll. number.)

(2) *Conchylolithus Anomites semireticulatus* Martin, 1809

8. In my original application I recommended that *Conchylolithus Anomites semireticulatus* Martin, 1809, should be interpreted by reference to the specimen numbered B.3685 in the British Museum (Natural History) which was illustrated in 1928 as figs. 2a—c on plate 4 (Muir-Wood, 1928, *Mem. geol. Surv. Gt. Brit.* 3(1)). This specimen has no locality and is cut into two halves. Dr. A. G. Cooper (*Smithsonian Institution, Washington, D.C.*), with whom I later discussed this matter, took the view that this specimen was not suitable for selection as a neotype and it is for this reason that I recommend that the other specimen figured in my 1928 paper as an outline only, namely the entire specimen numbered B.45691, should now be accepted as the neotype. This specimen is in every respect more suitable for this purpose than specimen B.3685, being far better preserved and showing the ornament characteristic of the species.

9. The specimen designated above as the neotype for this species which is in the British Museum (Natural History) has the following label : " *Dictyoclostus semireticulatus* (Martin) NEOTYPE, Lower Carboniferous, Bolland, Yorkshire. Figd. Muir-Wood, 1928, *Mem. Geol. Surv. Gt. Brit. Pal.* 3(1) text-fig., 19 : 93, 94. B.45691 (re-registered from B.413) Gilbertson Coll ". (Originally four specimens were registered under the number B.413. As explained above the specimen now designated as the neotype was later re-registered under the number B.45691.) The following labels are affixed to the foregoing specimen :—

- (a) Oval yellow number label B.45691 (Official Registration Number) ;

- (b) Round green spot, indicating a figured specimen with a capital letter "N" written in Indian ink indicating that the specimen is a neotype ;
- (c) Small oblong white label bearing the number 101a (or 141a) in faded ink.

(3) *Conchyliolithus Anomites crumena* Martin, 1809

10. Davidson's specimens of *Conchyliolithus Anomites crumena* Martin, 1809, were figured in volume 2 of his *Mon. Brit. fossil Brach.* on plate 25, figs. 3—8 and on plate 54, figs. 16—18. Not all the specimens figured by Davidson on his plate 25 are preserved in the British Museum (Natural History). The only specimens now extant are those shown as figs. 4 and 8 on the above plate. The former of these specimens (fig. 4) lacks the umbo, while the latter (fig. 8) is not quite typical. Of the two surviving Davidson specimens shown on plate 54 (figs. 16 and 18), that shown as fig. 18 more closely resembles Martin's figure. This specimen is therefore here designated as the neotype of this species.

11. All the specimens of Davidson's which are still preserved in the British Museum (Natural History) are in a glass-topped box mounted on a wooden tablet, bearing the following labels :—

- (a) *On the front* : "*Camarophoria* [*Stenosisma*] *crumena* Martin. Carb. Limestone, Settle, Yorkshire and Wetton, Staffordshire. B.5597. Figd. Mon. Pal. Soc. vol. 2, 1860, pl. 25, figs. 4, 8, p. 113, and 1862, vol. 2, pl. 54, fig. 16, 18. Neotype pl. 54, fig. 18. BB.13025". (All the figured specimens and eight others originally bore the number B.5597. The neotype has now been re-registered under the number BB.13025.)

(b) *On the back* : On the back of the tablet there are the following labels of T. Davidson :—

(i) “ *Camarophoria crumena* Mart. = *Camarophoria schlotheimi* v. Buch. Scar Limestone Carboniferous, Settle, Yorkshire ” [with “ Wetton, Staffordshire ” added in pencil] ;

(ii) “ *Camarophoria crumena* Carb. limestone, Wetton, Staffordshire ”.

12. The following labels are actually affixed to the neotype :—

(a) Oval yellow number label BB.13025 (Official Registration Number) ;

(b) Round green ticket bearing the number 18 in black ink ;

(c) A capital letter “ N ” written in Indian ink indicating that this specimen is a neotype.

(4) *Conchylolithus Anomites trigonalis* Martin, 1809

13. In my original application I suggested that the Commission should give a Ruling that the nominal species *Conchylolithus Anomites trigonalis* Martin, 1809, should be identified by reference to the following figures in vol. 2 of Davidson’s *Mon. Brit. foss. Brach.* :—fig. 25 on plate 5 published in 1858 and figs. 3—4 on pl. 50 published in 1863. Now that it is possible to secure a superior method for determining a species by designating a neotype for it, this recommendation requires re-examination. I have therefore selected as the neotype for this species one of Davidson’s surviving specimens in the British Museum (Natural History) which is also one of the specimens illustrated on the plates of Davidson’s which in my original application I suggested should be taken as the standard of reference for this species.

This is the specimen which was figured by Davidson in 1863 Vol. 2 (5)(5) as figure 4 on his plate 50. The same specimen had previously been figured by him in 1852 in vol. 2(5)(1) of the same work as figure 33 on plate 5.

14. The label affixed to the back of the wooden tablet on which the neotype now designated is mounted reads as follows : “ *Spirifer trigonalis*, Carboniferous Limestone from Courland near Dalkeith ”. On the front of the tablet there is the following label : “ *Spirifer trigonalis* Martin Carb. Limest. Courland [sic], Dalkeith. B.7340. Fig. Mon. Pal. Soc. 1857, vol. 2, pl. 5, fig. 33, p. 29, also pl. 50, fig. 4. Neotype ”. (Note : Davidson spelled the name of this place incorrectly as “Courland”, instead of “Cousland”, on the legend of his plate 5.)

15. The following labels are affixed to the specimen :—

- (a) Oval yellow number label B.7340 (Official Registration Number) ;
- (b) Round green ticket, indicating a figured specimen, with a capital letter “ N ” in Indian ink indicating that the specimen is a neotype.

(5) *Conchylolithus Anomites subconicus* Martin, 1809

16. In my application regarding this name, I pointed out (: 13) that for many years there was doubt and confusion as to the species to which in 1809 Martin gave the name *Conchylolithus Anomites subconicus*, and that it was not until 1858—1859 that the identity of this species was firmly established by the accurate description and illustration of that species given by Davidson in [1858—1859] (*Mon. Brit. foss. Brach.* 2(5)(1) : 48, pl. 9, fig. 3) and in 1863 (*ibid.* 2(5)(5) : 224, pl. 52, fig. 4). At the same time I noted that North (F.J.) in 1921 (*Quart. J. geol. Soc. Lond.* 76 : 203) selected a neotype but did not give a figure of it. In that

paper North recognised two sub-species for this species : Martin's sub-species, for which he selected the above neotype, thus became the nominate sub-species.

17. Since neotypes were not officially recognised at the time when I drew up my proposals in regard to the present name and there was no published figure of North's neotype, I decided that the best course would be to ask the Commission to define this species by reference to the specimen figured by Davidson in 1859 in vol. 2(5)(2) of his *Mon. Brit. foss. Brach.* as figure 3 on his plate 9. In the altered circumstances now obtaining I consider that the better course would be for the Commission to recognise North's neotype, provided that a figure of it is published at the same time. Direct correspondence on this subject has taken place, at my suggestion, between Mr. Hemming, Secretary to the Commission, and Dr. North, as the result of which it is now possible to attach to the present paper (plate 1, fig. 4) an illustration of the neotype selected by the latter in 1921.

18. The neotype of this species is in the National Museum of Wales at Cardiff. The following particulars regarding the labelling of this neotype (paragraphs 16 and 17 above) have been furnished by Dr. North :—

- (a) The number of the specimen in the National Museum of Wales Register is 19.246 G4 ;
- (b) The accompanying label is as follows : “ *Tylothyris subconica* (Martin) *subconica* (North). Carboniferous Limestone (D2), Attermire, Yorkshire. Specimen referred to in Q.J.G.S. Volume 76 (1920) p. 203 as Holotype of *Tylothyris subconica subconica* ”;
- (c) Dr. North has informed Mr. Hemming that a new label is being prepared for the above specimen, which will include the word “ neotype ” after the words “ *Tylothyris subconica* (Martin) *subconica* (North) ” quoted in (b) above.

(6) *Conchylolithus Anomites striatus* Martin, 1809

19. When I drew up my original proposals, I recommended that the Commission should direct that the species named *Conchylolithus Anomites striatus* by Martin in 1809 should be identified by reference to the specimen illustrated in 1820 by Sowerby (J.) as the upper figure on plate 270 (accidentally numbered as "170") in volume 3 of his *Mineral Conchology*. This specimen is discussed on page 125 of the foregoing volume. The same specimen had previously been described and figured by Sowerby in [1819] (*Trans. linn. Soc. Lond.* **12** (vol. for 1818) : 514, pl. 28, fig. 2). This specimen I have now designated as the neotype of this species.

20. The neotype designated in the preceding paragraph is in the British Museum (Natural History). It is mounted on a tablet with a second specimen, the labels on the front and back of which are as follows :—

(a) *Label on front of tablet* : “ (*Terebratula*) *Spirifer striatus* Martin sp. Carboniferous Limestone 43425. [The number ‘43425’ has been crossed out and replaced by the later number ‘B.61015—16’.] *Trans. Linn. Soc.* 1818 vol. 12, pl. 28, fig. 2, p. 514, *Figd. Min. Conch.* vol. III, pl. 270, p. 125 ”

(b) *Labels on back of tablet* : There are two labels on the back of the tablet, namely :—

(i) a small original label “ *Spirifer striatus* M.C.170 ” ;

(ii) an oval yellow ticket with the number “ 43425 ”, the original number of the specimen when first registered.

21. The following labels are actually affixed to the neotype :—

(a) an oval yellow ticket bearing the number “ B.61016 ” (Official Registration Number) ;

- (b) a round green ticket denoting that this is a figured specimen and marked in Indian ink with a capital letter "N" indicating that it is the neotype of the species.

(7) **Conchyliolithus Anomites productus Martin, 1809**

22. In my original application I recommended that the species named *Conchyliolithus Anomites productus* by Martin in 1809 should be identified by the entry for it in the *Official List* of a reference to the specimen numbered 32453 in the Geological Survey Museum which was illustrated in 1928 as figs. 1a—d on plate 1 in my paper on this subject (Muir-Wood, 1928, *Mem. geol. Surv. Gt. Brit. (Paleont)* 3(1)). Now, however, that Martin's name *productus* has been validated by the Commission, it would, I think, be more appropriate that the entry to be made in the *Official List* should be related to Martin's original specimen, which is preserved in the White Watson Collection in the British Museum (Natural History), for that specimen may now be regarded as the holotype of this species. The reference suggested in my original application was to a good typical figure of this species and not to an "unofficial" neotype. Martin's specimen has not been re-figured by any later author. It is now accordingly refigured as figs 1 to 3 on plate 1 annexed to the present application.

23. The holotype of *productus* Martin is in two parts, both of which are mounted on a wooden tablet, to which the following labels are affixed :—

- (a) *On the front of the tablet* : " *Anomites [Productus] productus* Martin, Carboniferous, Derbyshire, Fig. Martin, *Petrificata Derbiensia*, 1809, vol. 1, pl. 22, figs. 1—3. White Watson Coll. B.40952 HOLOTYPE " ;
- (b) *On the back of the tablet* : There are two labels on the back of the tablet, namely :—
- (i) " *Anomites productus* Martin, pl. 22, figs. 1—3 [no. 992] " .

- (ii) "Carboniferous Derbyshire, White Watson Coll. (W. Martin) Purch. A. Bingham 1914".

24. In addition, there are the following labels attached to the holotype itself :—

(a) *Affixed to both portions of the holotype* : Both portions of the holotype bear the following identical labels :—

(i) an oval yellow number label "B.40952" (Official Registration Number) ;

(ii) a round green ticket denoting that this is a figured specimen ;

(b) *Affixed only to the smaller portion of the holotype* : The following label is attached only to the smaller portion of the holotype : a small oblong stained brown label with the printed number "922".

(8) *Conchylolithus Anomites pugnus* Martin, 1809

25. In the case of the species named *Conchylolithus Anomites pugnus* Martin, 1809 (as in that of *Conchylolithus Anomites productus* Martin, 1809, discussed in the immediately preceding paragraphs) Martin's original specimen is extant and can serve as the holotype of this nominal species now that Martin's name for that species has been validated by the Commission under its Plenary Powers. The only difference between these two cases is that, while Martin's specimen of *productus* has never been re-figured, there is a recent figure of his specimen of *pugnus*. In my original application I asked that the Commission should insert in the entry on the *Official List* relating to the name *pugnus* Martin a note that the species so named be interpreted by reference to Martin's type specimen preserved in the British Museum (Natural History) under the number "B.61451", which was re-figured by myself in 1951 (Muir-Wood, 1931, *Ann. Mag. nat. Hist.* (12) 4 : 117, pl. 4, figs. 3a—c). This recommendation is now re-submitted.

26. The labels accompanying the holotype of this species are the following :—

(a) *On the front of the tablet* :—

Rhynchonella pugnus Martin sp.
Conchylolithus Anomites (pugnus)
 Carboniferous Limestone.—Derbyshire
 Figd. Petrif. Derbiensia, pl. 22, f. 4, 5
 Sowerby Collection B.61451 HOLOTYPE

(b) *On the back of the tablet* :

Figd. Muir-Wood, Ann. Mag. Nat. Hist. (12) IV, no. 38
 Feb. 1951, pl. 4, figs. 3a—d

27. The following labels are affixed to the holotype :—

(a) a yellow number label B.61451 (Official Registration Label)

(b) a green spot indicating that this is a figured specimen.

Recommendations

28. For the reasons set forth in the present application I ask the International Commission on Zoological Nomenclature to approve the following revised proposals in place of those submitted in Point (2) at the close of my original application (Muir-Wood, 1951, *Bull. zool. Nomencl.* 6 : 15—16), namely that, when the eight names specified below are placed on the *Official List of Specific Names in Zoology*, following their validation under the Plenary Powers, the following directions be given as to the manner in which the nominal species concerned be interpreted :—

(a) *Conchylolithus Anomites resupinatus* Martin, 1809, to be interpreted by reference to the neotype designated by George (T.N.) & Ponsford (D.A.) in 1938 (paragraph 5) ;

(b) the under-mentioned nominal species to be interpreted by the neotypes severally designated therefore in the under-mentioned paragraphs of the present application :—

(i) *Conchyliolithus Anomites semireticulatus* Martin, 1809 (paragraph 8) ;

(ii) *Conchyliolithus Anomites crumena* Martin, 1809 (paragraph 10) ;

(iii) *Conchyliolithus Anomites trigonalis* Martin, 1809 (paragraph 13) ;

(iv) *Conchyliolithus Anomites striatus* Martin, 1809 (paragraph 19) ;

(c) *Conchyliolithus Anomites subconicus* Martin, 1809, to be interpreted by reference to the neotype designated by North (F.J.) in 1921 (paragraph 16 and pl. 1, fig. 4 ;

(d) the under-mentioned nominal species to be interpreted by the holotypes thereof now preserved in the British Museum (Natural History) as severally indicated in the paragraphs noted below :—

(i) *Conchyliolithus Anomites productus* Martin, 1809 (paragraph 22 and pl. 1, figs. 1 and 3) ;

(ii) *Conchyliolithus Anomites pugnus* Martin, 1809 (paragraph 25).

EXPLANATION TO PLATE 1

Illustrations of the holotype of "Conchyliolithus Anomites productus" Martin, 1809 and of the neotype of "Conchyliolithus Anomites subconicus" Martin, 1809

(a) The holotype of "Conchyliolithus Anomites productus" Martin, 1809

Note: All the illustrations of the above specimen are natural size

Fig. 1 Ventral view of pedicle valve

Fig. 2 Posterior view showing how the pedicle valve has fractured along the diaphragm, which is here seen as a crescentic plate round the visceral disk of the brachial valve

Fig. 3 Posterior view, showing the part of the shell which has split off, namely the visceral disk of the pedicle valve together with the inner layer of the visceral disk of the brachial valve

(b) The neotype of "Conchyliolithus Anomites subconicus" Martin, 1809

(Note: The illustration of the above specimen is enlarged by $1\frac{1}{2}$ diameters.)

Fig. 4 Dorsal view of brachial valve showing also the flattened interarea of the pedicle valve.



Fig. 1.

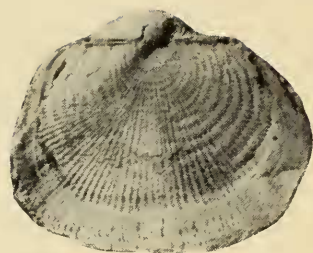


Fig. 3.



Fig. 2.

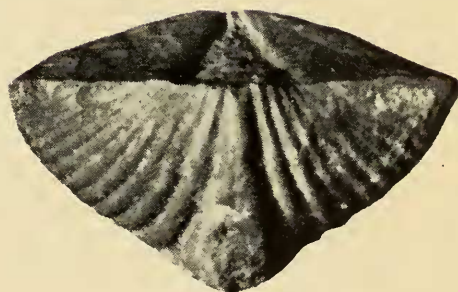


Fig. 4.

For the explanation to this plate see opposite.

APPENDIX 2

REQUEST FOR THE SUBSTITUTION OF NEOTYPES IN
PLACE OF PREVIOUSLY PUBLISHED FIGURES AS
THE STANDARD OF REFERENCE FOR IDENTIFYING
TWO SPECIES OF THE CLASS ANTHOZOA, THE
NAMES PUBLISHED FOR WHICH BY MARTIN
(W.) IN 1809 HAVE BEEN VALIDATED BY THE
INTERNATIONAL COMMISSION ON
ZOOLOGICAL NOMENCLATURE UNDER
ITS PLENARY POWERS

By C. J. STUBBLEFIELD, Sc.D., F.R.S.
(*Geological Survey and Museum, London*)

I have been giving further consideration to the proposals for the validation by the International Commission on Zoological Nomenclature under its Plenary Powers of the specific names published by Martin (W.) in 1809 in his *Petrificata Derbiensia* for two species of the Class Anthozoa which I submitted in 1950 in a paper in which also Dr. Helen Muir-Wood (*British Museum (Natural History)*) submitted corresponding proposals for the validation of names published by Martin for ten species of Brachiopoda (Muir-Wood & Stubblefield, 1951, *Bull. zool. Nomencl.* 6 : 7—17). It will be recalled that in that paper I asked that the Commission, when validating the names in question, should give directions that the species so named should be identified by reference to certain specified previously published figures. The position in this matter has, in my opinion, been materially altered by the decision by the Fourteenth International Congress of Zoology, Copenhagen, 1953, to insert in the *Règles* provisions recognising neotypes as a category of type specimen. If neotypes had been a recognised category at the time when I submitted my application in the present case, I should certainly have asked the Commission to give official recognition to the

neotypes which some fifteen years earlier had been "unofficially" designated for the two species in question and which form the currently accepted basis for the interpretation of those species. In the altered circumstances now obtaining, I now ask the Commission to adopt this course in place of directing (as in 1950 I asked should be done) that the species concerned should be interpreted by reference to the published figures of those neotypes.

2. The two species concerned are : (1) *Erasmalolithus Madreporites duplicatus* Martin, 1809 ; (2) *Erasmalolithus Madreporites floriformis* Martin, 1809. In each case, I asked that the Commission should use its Plenary Powers to validate the name in question and that, having done so, it should direct that those species be interpreted by reference to the figures published in 1916 in the paper in which Stanley Smith designated the specimens so figured to be the "unofficial" neotypes for those species (Smith (S.), 1916, *Quart. J. geol. Soc. Lond.* 71). These neotypes which I now ask should be formally recognised by the International Commission are both in the collection of the Sedgwick Museum, Cambridge University. For the information given in the present application regarding the registration and labelling of these neotypes, I am indebted to Mr. A. G. Brighton, Curator of that Museum.

(a) ***Erismalolithus Madreporites duplicatus* Martin, 1809**

3. The neotype for *Erismalolithus Madreporites duplicatus* Martin, 1809, was designated under the name *Lonsdaleia duplicata duplicata* (Martin) by Stanley Smith on page 238 of the paper published by him in 1916, to which reference has been made in the preceding paragraph. It was illustrated as figure 1 on plate 17 of the same paper. This neotype, as preserved in the Sedgwick Museum, consists of a slide numbered A.2149. The specimen from which this slide was cut is not in the collection of the above Museum.

4. The following are the particulars relating to this neotype given in the Sedgwick Museum Catalogue :—

A.2149. Slide. Fig'd Smith 1916 Q.J.G.S. lxxi for 1915 p. 238 pl. xvii fig. 1 as *Lonsdaleia duplicata duplicata* (Martin). D₂

Carboniferous Limestone ; top of Crick Hill, S.E. of Matlock, Derbyshire. "In the absence of the holotype, this may be accepted as the Neotype . . ." Coll. Prof. T. F. Sibly.

5. The labels on slide A.2149 [neotype of *E.M. duplicatus* Martin, 1809] are as follows :—

Sedgk. Mus.
Cambridge
A.2149

Lonsdaleia
duplicata duplicata (Martin)
D₂ L. Carb.
Top of Crick Hill, Derbyshire.
From Neotype. Coll. T. F. Sibly.

Fig'd S. Smith
Q.J.G.S. Vol. lxxi 1916
pl. xvii fig. 1

Top of Crick Hill, Derbyshire. D₂

(b) *Erismatolithus Madreporites floriformis* Martin, 1809

6. The neotype for *Erismatolithus Madreporites floriformis* Martin, 1809, was designated under the name *Lonsdaleia floriformis floriformis* (Martin) by Stanley Smith on pages 247 and

259 of his paper published in 1916 and was illustrated as figures 1—3 on plate 19 of the same paper. This neotype is divided into five separate portions, all of which are preserved in the Sedgwick Museum.

7. The following are the particulars relating to this neotype given in the Sedgwick Museum Catalogue :—

A.2359a-e. Described M^CCoy 1849 Ann. Mag. Nat. Hist. (2) iii p. 10, and 1854 Contrib. Brit. Palaeont. p. 78 as *Strombodes conaxis* M^CCoy.

Fig'd M^CCoy 1851 Brit. Palaeoz. Foss. Cambridge p. 102 pl. 3B fig. 4 (A.2359a) fig. 4a (A.2359b), fig. 4b as *Strombodes conaxis* M^CCoy. Carboniferous Limestone ; near Bakewell, Derbyshire.

Listed Woods 1891 Cat. Type Foss. Woodw. Mus. Cambridge p. 23 as *Lonsdaleia floriformis* (Martin). Pres. W. Hopkins. Tablet 50.

Slides A.2359f-i cut by S. Smith.

Fig'd Smith 1916 Q.J.G.S. lxxi for 1915 pp. 247, 259 pl. xix fig. 1 (A.2359f), fig. 2 (A.2359g), fig. 3 (A.2359a) as *Lonsdaleia floriformis floriformis* (Martin), and chosen as Neotype of this species.

Listed Hill 1940 Mon. Pal. Soc. Carb. Rugose Corals Scotland p. 155 as neotype of *Lonsdaleia floriformis floriformis* (Martin).

Fig'd Wang 1950 Phil. Trans. Roy. Soc. London B.234 p. 212 pl. v fig. 29 (A.2359f) as *Lonsdaleia floriformis* (Martin).

8. The following are the particulars given on the labels attached to the slides on which the various portions of this neotype are mounted :—

(i) The 5 separate parts of the specimen (A.2359a-e) have each a label stuck on them, e.g. (A.2359f-i) have similar labels.

<p>Sedgk. Mus. Cambridge. A.2359a</p>

; the slides

(ii) A.2359a has stuck on it a label reading "Figured M^CCoy Pal. Foss. pl. 3B fig. 4".

(iii) A.2359a-e are in trays or boxes stuck down on a blue tablet, on which are stuck five labels reading :—

50

W. Hopkins Coll.

Genus *Lonsdaleia*
 Species *floriformis floriformis* (Martin). Neotype
 Rock Carboniferous Limestone
 Locality Near Bakewell, Derbyshire. A.2359a-e

Figured M^CCoy 1851 Brit. Palaeoz. Foss. Camb. p. 102 pl. 3B figs. 4, 4a-b as *Strombodes conaxis* M^CCoy [Holotype].

Figured S. Smith 1916 Q.J.G.S. lxxi p. 259 pl. xix fig. 3 as *Lonsdaleia floriformis floriformis* (Martin). Neotype.

(iv) The labels on slide A.2359f are five :—

Sedgk. Mus.
 Cambridge.
 A.2359f

Type specimen of *Strombodes conaxis* M^CCoy.

Genus *Lonsdaleia*
 Species *floriformis floriformis* (Martin)
 Rock [D₂]. Carboniferous Limestone
 Locality Derbyshire. A.2359f
 NEOTYPE Sedg. Mus. No. 50

Fig'd S. Smith
 Q.J.G.S. vol. lxxi
 1916 pl. xix fig. 1

Figured Wang 1950
 Phil. Trans. Roy. Soc. Lond.
 B.234 p. 212 pl. 5 fig. 19 as
Lonsdaleia floriformis.

(v) The four labels attached to Slide A.2359g are :—

Figured S. Smith
 Q.J.G.S. Vol. lxxi 1916
 pl. xix, Fig. 2

50. TYPE SPECIMEN of
Strombodes conaxis M^CCoy.

Lonsdaleia
floriformis floriformis (Martin)
 [D₂]. Derbyshire

 NEOTYPE
 A.2359g

Sedgk. Mus.
 Cambridge.
 A.2359g

(vi) The three labels attached to Slide A.2359h are :—

Sedgk. Mus.
 Cambridge.
 A.2359h